

43. (New) A filter according to claim 1, wherein the operation time of the wave digital filter is greater than an operation time required by a similar wave digital filter not including the at least one controlled gate.

44. (New) A filter according to claim 1, wherein the wave digital filter has a single external input.

45. (New) A filter according to claim 20, wherein the delayed value comprises a value generated by at least one of the adapters of the wave digital filter.

46. (New) A filter according to claim 20, wherein the delay does not affect a result value provided by the wave digital filter.

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47. (New) A filter according to claim 23, wherein the delayed input comprises a value generated by at least one of the adapters of the wave digital filter.

48. (New) A filter according to claim 23, wherein the delay does not affect a result value provided by the wave digital filter.

49. (New) A filter according to claim 23, wherein the delay reduces a number of signal value changes in at least one of the adapters.

50. (New) A filter according to claim 29, wherein the delayed value comprises a value generated by at least one of the adapters of the wave digital filter.

51. (New) A filter according to claim 29, wherein the delay does not affect a result value provided by the wave digital filter.

52. (New) A filter according to claim 29, wherein the delay reduces a number of signal value changes occurring in at least one of the adapters.

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53. (New) A wave digital filter, comprising:

a plurality of memoryless adapters each having two or more ports, each port comprising an input and an output; and